

CLAIMS

We Claim:

- 1 1. A system for absorbing energy from an impact, said system comprising:
2 an energy absorbing member comprising first and second opposing
3 walls;
4 at least one rib disposed between said first and second opposing
5 walls;
6 said energy absorbing member comprising a thermoplastic, said
7 thermoplastic comprising a polyolefin based resin and 35-
8 75% by weight of an amorphous resin.
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- 1 2. The system according to claim 1, wherein said thermoplastic has a
2 flexural modulus of between about approximately 9,000 kg/cm² and about
3 approximately 22,000 kg/cm².
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- 1 3. The system according to claim 1, wherein said thermoplastic has a 15
2 to 40 kg/cm² Izod impact value at an ordinary temperature.
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- 1 4. The system according to claim 1, wherein said polyolefin based resin is
2 a polypropylene resin, and said amorphous resin is at least one resin
3 selected from the group of resins consisting of polystyrene resin, impact
4 resistant polystyrene resin, acrylonitrile-butadiene-styrene resin,
5 polyphenylene ether resin, and mixtures thereof.
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- 1 5. A system for absorbing energy from impacts, said system comprising:
2 a blow molded energy absorbing member comprising;
3 first and second opposing walls;

4 at least one fused pair of first and second recessed ribs disposed
5 between said first and second opposing walls;
6 said first recessed rib being integrally molded from said first wall
7 and having a first recessed rib end;
8 said second recessed rib is integrally molded from said second wall
9 and having a second recessed rib end;
10 said first and second recessed ribs being integrally fused at a
11 welded surface disposed between said first and second
12 recessed rib ends;
13 said energy absorbing member comprising a thermoplastic, said
14 thermoplastic comprising a polyolefin based resin and 35-
15 75% by weight of an amorphous resin, and having a 15 to 40
16 kg/cm² Izod impact value at about approximately normal
17 temperature.

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1 6. The system according to claim 5, wherein said polyolefin based resin is
2 a polypropylene resin, and said amorphous resin is at least one resin
3 selected from the group consisting of polystyrene resin, impact resistant
4 polystyrene resin, acrylonitrile-butadiene-styrene resin, polyphenylene
5 ether resin, and mixtures thereof.

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1 7. A system for absorbing energy from an impact, said system comprising:
2 an energy absorbing member comprising first and second opposing
3 walls;
4 said energy absorbing member comprising blow molded
5 thermoplastic;
6 at least one rib disposed between said first and second opposing
7 walls; and

8 said thermoplastic comprising a first resin, having a flexural
9 modulus of not greater than about approximately 2,000
10 kg/cm², and a polyolefin based resin.

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1 8. The system according to claim 7, wherein said first resin has a flexural
2 modulus not greater than 200 kg/cm².

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1 9. The system according to claim 7, wherein said first resin is at least one
2 resin selected from the group of resins consisting of olefin based
3 elastomers, styrene based elastomers, low density polyethylene, straight
4 chain-like low density polyethylene, low density polyethylene, straight
5 chain-like low density polyethylene and mixtures thereof.

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1 10. The system according to claim 7, wherein the polyolefin based resin is
2 at least one resin selected from the group consisting of a polyethylene, a
3 polypropylene and a mixture thereof.

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1 11. The system according to claim 7, wherein said first resin comprises an
2 olefin based elastomer and said olefin based elastomer is at least one
3 elastomer selected from the group consisting of ethylene-propylene
4 copolymer rubber, ethylene-butene copolymer rubber, propylene-butene
5 copolymer rubber, hydrogenation product of butadiene-styrene copolymer
6 rubber, and mixtures thereof.

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1 12. The system according to claim 7, wherein said first resin is added to
2 said polyolefin based resin in a proportion of about approximately
3 between 3 to 20 parts by weight.

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1 13. The system according to claim 7, wherein said first resin to be added
2 to the polyolefin based resin is a thermoplastics resin having a glass
3 transition temperature not higher than about approximately -30°C.

1 14. A system for absorbing energy from an impact, said system
2 comprising:
3 a blow molded hollow energy absorbing member comprising;
4 first and second opposing walls;
5 at least one fused pair of first and second recessed ribs disposed
6 between said first and second opposing walls;
7 said first recessed rib is integrally molded from said first wall and
8 having a first recessed rib end;
9 said second recessed rib is integrally molded from said second wall
10 and having a second recessed rib end;
11 said first and second recessed ribs being integrally fused at a
12 welded surface disposed between said first and second
13 recessed rib ends;
14 said blow molded hollow impact absorbing member comprising a
15 polypropylene resin and about approximately 3 to 20 parts by
16 weight of an olefin based elastomer, said olefin based
17 elastomer having a flexural modulus of not greater than 200
18 kg/cm² and a glass transition temperature not higher than
19 -30°C.